

REMARKS

Claims 21-23 are rejected, under 35 U.S.C. § 102, as being anticipated in view of WO-2001 58687 (Okabe '079 is relied on as the English translation of WO 2001 58687) while claims 16-20 are rejected, under 35 U.S.C. §§ 102(e) and 103(a), as being unpatentable over Okabe '079. The Applicant acknowledges and respectfully traverses all of the raised anticipatory and obviousness rejections in view of the following remarks.

Okabe '079 relates to a polyolefin composite laminate made up of a number of different layers. In view of the disclosure of this reference, it appears as though the composite laminate is made of a layer of expanded polyolefin 11. A layer of low density polyethylene film 14 is placed upon each face of the polyolefin layer. Finally, a layer of polyolefin resin 15 is stretched over each of the layers of the polyethelene film 14. After the laminate is assembled, it is typically hand pressed, at a temperature of 125 degrees Celsius, for a few minutes and then cooled with water in a water-press (see paragraph [0198]). It would appear to the Applicant that the laminate is compressed, at a temperature of 125 degrees Celsius, in order to melt the low density polyethylene 14 to adhere the first polyolefin layer 11 to the two outer polyolefin layers 15. It is respectfully submitted that this reference does not, in fact, teach the laminate being subjected to a temperature that would melt the central polyolefin layer 14 to deform the faces of the polyolefin layer 14.

As presently claimed, the first and the second faces of the core are deformed during compression of the laminate. In order for this to occur, the core must be heated to a temperature higher than its softening temperature such that the first and second faces will deform and/or somewhat flatten in order provide an increased surface area which facilitates better adhesion of the core to the first and the second skins. The Applicant believes these claims structural differences are in no way taught, suggested or disclosed in the applied reference of WO 2001 58687 and/or Okabe '079. Accordingly, it is respectfully submitted that

the presently pending claims are allowable over the art of record in this application, including the applied art of WO 2001 58687 and/or Okabe '079.

The Examiner is thanked for drawing the Applicant's attention the two additional references noted in the Advisory Action dated March 28, 2006. Landi et al. 5,039,567 ("Landi et al. '567") and Landi et al. 5,701,621 ("Landi et al. '621") both relate to resilient panels having anisotropic flexing characteristics and the methods of making the same. Landi et al. '621 incorporates Landi et al. '567 by reference, in col. 6, lns.39-41, particularly the honeycombed panel and the method of forming the honeycombed panel.

According to both of these references, the honeycombed panel is made of expanded strips or ribbons bonded together and placed together. The strips or ribbons are folded or bent to form S-shapes and these S-shaped strips are then placed together in a manner to form the cells of the honeycombed panel.

The references of Landi et al. '567 and Landi et al. '621 both generally relate to flexible energy absorbing panels. The Applicant asserts that the panel taught by Landi et al. '567 and/or Landi et al. '621 are designed to have characteristics which are in direct contrast to the characteristics and features of the panels according to the presently claimed invention.

Landi et al. '567 specifically relates to a panel and a method of making the same. The panel is made up of strips of material bonded together into a "honeycomb pattern". The panel has predetermined degrees of flex depending on its structure and also has excellent "spring-back recovery characteristics". The title of the patent indicates that the panels have "flexing characteristics". The Applicant asserts these panels are made so as to flex in order to absorb energy.

According to Landi et al. '567, the honeycombed panel then receives a first sheet to be attached to the upper surfaces. The sheet is placed on the honeycombed panel and a plate is brought into contact with the sheet to thereby thermally compressing the sheet to the panel.

Next, the panel is flipped over and a second sheet is placed on the opposing surface of the panel. The plate is then brought into contact with the sheet to thereby thermally compress the sheet to the panel.

Landi et al. '621 specifically relates to a liner for overlaying a mattress. By its very nature, however, this panel is also flexible. As stated in the abstract, this liner includes a panel having a "flexible thermoplastic elastomeric honeycomb core" such that the "core can anisotropically flex to stabilize and spread the load exerted by the user of the mattress pad." The design of the liner result with the benefits that "resiliency and flexibility [are] increased".

The composite sheet, according to the presently claimed invention, is notably different than the panels taught by either Landi et al. '567 and/or '621. As presently claimed, the honeycomb panel according to the present application is made of extruded tubes, that are placed together in a side by side manner. The Applicant asserts that such design of the honeycomb panel has many benefits, such as strength and resiliency for example, over the arrangement of the applied art.

In conclusion, the Applicant adamantly asserts that the panels of Landi et al. '567 and/or Landi et al. '621 designed to be flexible. Such feature is in direct contrast to the presently pending claims which are directed at a panel that is rigid and does not flex. In order to mold or bend the panel to form a desired curvature, the panel is necessarily heated in an oven in order to soften the material before the panel is pressed and reshaped into a desired curvature or shape. Upon cooling, the panel material hardens and resumes its desired rigid characteristics.

In order to emphasize the above noted distinctions between the presently claimed invention and the applied art, the independent claim 16 of this application now recites the features of "a lightweight rigid core being formed by a plurality of parallel extruded tubes the lightweight rigid core (34) and the first and the second skins (32,36) being

simultaneously uniformly compressed to a thickness less than a sum of an initial thicknesses of the lightweight rigid core (34), the first skin (32) and the second skin (36) while at a temperature higher than the softening temperature of the lightweight rigid core (34), and the first side and the second side of the lightweight rigid core (34) of honeycomb cellular material being distorted upon uniform compression of the composite sheet material", while independent claim 21 now recites the feature of "a lightweight rigid core (12, 34) of honeycomb cellular material having an initial thickness and being formed by a plurality of adjacent parallel extruded tubes . . . the first side and the second side of the lightweight rigid core (12, 34) of honeycomb cellular material being deformed" and new independent claim 26 recites the features of "the lightweight rigid core (34) of honeycomb cellular material comprising a plurality of adjacent tubes extending from the first side to the second side . . . opposed ends of the plurality of tubes on the first side and the second side of the lightweight rigid core (34) of honeycomb cellular material being distorted upon uniform compression of the composite sheet material, such that the distorted opposed ends of the tubes on the first side and the second side of the core provide an increased surface area for contact with the first skin and the second skin." Such features are believed to clearly and patentably distinguish the presently claimed invention from all of the art of record, including the applied art. Support for the above entered claim amendments can be found, for example, in paragraph [033] of the originally filed specification and the originally filed drawings.

In view of the above amendments and remarks, it is respectfully submitted that all of the raised rejection(s) should be withdrawn at this time. If the Examiner disagrees with the Applicant's view concerning the withdrawal of the outstanding rejection(s) or applicability of the WO 2001 58687, Okabe '079, Landi et al. '567 and/or Landi et al. '621 references, the Applicant respectfully requests the Examiner to indicate the specific passage or passages, or the drawing or drawings, which contain the necessary teaching, suggestion and/or disclosure

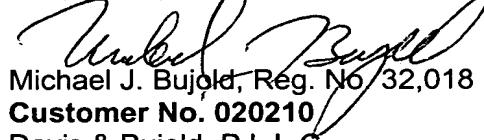
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required by case law. As such teaching, suggestion and/or disclosure is not present in the applied references, the raised rejection should be withdrawn at this time. Alternatively, if the Examiner is relying on his/her expertise in this field, the Applicant respectfully requests the Examiner to enter an affidavit substantiating the Examiner's position so that suitable contradictory evidence can be entered in this case by the Applicant.

In view of the foregoing, it is respectfully submitted that this application is now placed in a condition for allowance. Action to that end, in the form of an early Notice of Allowance, is courteously solicited by the Applicant at this time.

In the event that there are any fee deficiencies or additional fees are payable, please charge the same or credit any overpayment to our Deposit Account (Account No. 04-0213).

Respectfully submitted,


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